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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

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WILLS, LAWRENCE E	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,586	EOM ET AL.	
	Examiner	Art Unit	
	Lawrence E. Wills	2625	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/17/2007 have been fully considered but they are not persuasive.

Regarding claim 1, the Applicant alleged (see page 1 of remarks) "the image processing unit 20 of Akiyama stores input code data in a RAM and interprets the code data. However, the image processing unit 20 is not directly connected to the engine control unit."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the image processing unit 20 of Akiyama stores input code data in a RAM and interprets the code data. However, the image processing unit 20 is not directly connected to the engine control unit.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In this case, the present claimed invention (i.e. claim 1) recites "An image forming apparatus, comprising: an engine mechanism to perform a printing operation with respect to print data; a video unit to convert the print data into image data readable by the engine mechanism; and an engine control unit to control the engine mechanism to perform the printing operation with the image data in accordance with control by the video unit, wherein the video unit comprises a processor, and the video unit and the engine control unit are driven by the processor", and such features are clearly disclosed by Akiyama.

Akiyama clearly shows that an image forming apparatus (i.e. see image forming apparatus in column 5, line 28), comprising: an engine mechanism (number 25 in Fig.1) to perform a printing operation with respect to print data (i.e. print command to an engine unit 25 in column 5, lines 52-53); a video unit (number 26 in Fig. 1) to convert the print data into image data readable by the engine mechanism (i.e. see convert info video data in column 5, lines 48-50); and an engine control unit (number 25 in Fig.1) to control the engine mechanism to perform the printing operation with the image data in accordance with control by the video unit (i.e. see outputs the video data in column 5, lines 51-56) , wherein the video unit comprises a processor (i.e. see number 20 and 16 in Fig.1), and the video unit and the engine control unit are driven by the processor (the CPU 16 and Image Processing Unit 20 are both part of the video unit and the CPU 16 is directly connected and control the engine unit by the Video I/F 24, see Fig. 1) as required by claim 1. In view of this, the Examiner asserts that Akiyama for at least the reasons discussed above anticipates claim 1, and the 102 rejections for claim 1 is maintained.

Regarding claim 6, the Applicant alleged (see page 1 of remarks) "claim 6 recites a bi-directional parallel bus to directly connect the video unit and the engine control unit. However, because the image processing unit 20 and the CPU 16 of Akiyama are separate, the image processing unit 20 is not directly connected to the engine control unit."

In this case, the present claimed invention (i.e. claim 6) recites "Akiyama teaches an image forming apparatus, comprising: an engine mechanism to perform a printing operation with respect to print data; a video unit to convert the print data into image data readable by the engine mechanism; an engine control unit to control the engine mechanism to perform the printing operation with respect to the image data in accordance with control by the video unit; a bi-

directional parallel bus to directly connect the video unit and the engine control unit; and a single processor to drive the video unit and the engine control unit. ", and such features are clearly disclosed by Akiyama.

Akiyama clearly shows that an image forming apparatus comprising: an engine mechanism (number 25 in Fig.1) to perform a printing operation with respect to print data (i.e. see outputs the video data in column 5, lines 51-56); a video unit (number 26 in Fig.1) to convert the print data into image data readable by the engine mechanism (i.e. see convert info video data in column 5, lines 48-50); an engine control unit (number 25a in Fig.2B) to control the engine mechanism (number 25 in Fig. 2B) to perform the printing operation with respect to the image data in accordance with control by the video unit (i.e. see outputs the video data in column 5, lines 51-56); a bi-directional parallel bus (number 24, Video I/F, in Fig.24) to directly connect the video unit and the engine control unit (Fig. 2B shows the direct connection between the printer controller or video unit 26 and the engine control unit 25a, in addition Fig. 1 shows the Video I/F 24 connecting the print controller and engine mechanism); and a single processor to drive the video unit and the engine control unit (Fig.1 clearly shows a single CPU 16 that connects to the image processing unit 20 and engine unit 25. In addition, column 5, line 52 states the "the CPU outputs a print command to an engine unit" which clearly shows the CPU drives the engine unit). In view of this, the Examiner asserts that Akiyama for at least the reasons discussed above anticipates claim 6, and the 102 rejections for claim 6 is maintained.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-3, 5-7, 9-12,14, and 16-18** are rejected under 35 U.S.C. 102(b) as being anticipated by **Akiyama (U.S. Patent No. 5,872,635)**.

With regard to claim 1, Akiyama teaches an image forming apparatus, comprising an engine mechanism 25 (Figure 1,2A, 2B) to perform a printing operation with respect to print data, a video unit 26 to convert the print data into image data readable by the engine mechanism 25 (Column 3, lines 28-32, an image forming apparatus according to the present invention comprises image forming means for forming an image on a recording medium on the basis of pixel data generated by image processing means for generating pixel data), and an engine control unit 25a to control the engine mechanism 25 to perform the printing operation with the image data. The video unit 26 comprises a processor 16 that controls the video unit 26 and the engine control unit 25a. (Figure 2B shows an engine control unit that controls engine mechanism; Figure 1 shows a single processor driving video and engine units.)

With regard to claim 2, Akiyama teaches an image forming apparatus further comprising a system bus 24 to directly connect the engine control unit 25a with the processor 16, wherein the engine control unit 25a drives the engine mechanism 25 in accordance with control by the processor. (Figure 1, in addition, column 5, lines 51-54, When video data for one page are stored in the frame memory 23, the CPU 16 outputs a print command to an engine unit 25 via a video interface 24, and outputs the video data stored in the frame memory 23 to the engine unit 25)

With regard to claim 3, Akiyama teaches an image forming apparatus comprising a bi-directional data bus and a control bus. (Figure 1 shows Video I/F, a bi-directional bus, in addition, Figure 2B shows each signal of the bi-directional bus, and Figure 3 lists each signal)

With regard to claim 5, Akiyama teaches an image forming apparatus, wherein the processor reads the state information stored in the memory to check a state of the engine mechanism, and transmits the image data to the engine control unit to perform the printing operation. (Column 2, lines 30-37, When 1-byte command information is supplied from the video controller to the engine controller in synchronism with the signal /SCLK, the engine controller sends back 1-byte status information to the video controller. This command information includes two commands, i.e., a status request command for checking the status of the printer engine, and an execution command for instructing the printer to perform some operation.)

With regard to claim 6, Akiyama teaches an image forming apparatus, comprising: an engine mechanism (number 25 in Fig.1) to perform a printing operation with respect to print data (i.e. see outputs the video data in column 5, lines 51-56); a video unit (number 26 in Fig.1) to convert the print data into image data readable by the engine mechanism (i.e. see convert info video data in column 5, lines 48-50); an engine control unit (number 25a in Fig.2B) to control the engine mechanism (number 25 in Fig. 2B) to perform the printing operation with respect to the image data in accordance with control by the video unit (i.e. see outputs the video data in column 5, lines 51-56); a bi-directional parallel bus (number 24, Video I/F, in Fig.24) to directly connect the video unit and the engine control unit (Fig. 2B shows the direct connection between the printer controller or video unit 26 and the engine control unit 25a, in addition Fig. 1 shows

the Video I/F 24 connecting the print controller and engine mechanism); and a single processor to drive the video unit and the engine control unit (Fig.1 clearly shows a single CPU 16 that connects to the image processing unit 20 and engine unit 25. In addition, column 5, line 52 states the "the CPU outputs a print command to an engine unit" which clearly shows the CPU drives the engine unit).

With regard to claim 7, Akiyama teaches an image forming apparatus, wherein the video unit 26 comprises the processor 16. (Figure 1, in addition, column 5, lines 35-39 a controller unit (or printer controller) 26 includes components designated by reference numerals 16 to 24 (to be described below). A CPU 16 receives coded image information (code data) from an external apparatus 27 such as a host computer via an external interface 17 upon execution of a control program stored in a ROM 19.)

With regard to claim 9, Akiyama teaches an image forming apparatus, wherein the processor 16 reads the state information stored in the memory to check a state of the engine mechanism, and transmits the image data to the engine control unit to perform the printing operation. (Column 2, lines 30-37, When 1-byte command information is supplied from the video controller to the engine controller in synchronism with the signal /SCLK, the engine controller sends back 1-byte status information to the video controller. This command information includes two commands, i.e., a status request command for checking the status of the printer engine, and an execution command for instructing the printer to perform some operation.)

With regard to claim 10, Akiyama teaches an image forming apparatus, comprising: an engine to perform a printing operation according to image data, a controller to control the

engine to perform the printing operation, and a converter to convert received print data into the image data, the converter comprising a single processor to drive the converter and the controller. (Column 3, lines 28-32, an image forming apparatus according to the present invention comprises image forming means for forming an image on a recording medium on the basis of pixel data generated by image processing means for generating pixel data. In addition, Figure 2B shows an engine control unit that controls engine mechanism; Figure 1 shows a single processor driving video and engine units with a bi-directional bus.)

With regard to claim 11, Akiyama teaches an image forming apparatus, wherein the processor 16 is a microprocessor CPU. (Figure 1 describes the processor 16 as a CPU)

With regard to claim 12, Akiyama teaches an image forming apparatus, wherein the controller is an application specific integrated circuit (ASIC). (Column 12, lines 66-67 thru column 13, line 1 Note that the present invention may be applied to either a system constituted by a plurality of devices or an apparatus consisting of a single device.)

With regard to claim 14, Akiyama teaches an image forming apparatus, further comprising a bus to directly connect the controller with the processor. (Figure 1 shows a single processor driving video and engine units with a bi-directional bus.)

With regard to claim 16, Akiyama teaches an image forming apparatus wherein the controller is integrated into a single chip together with the processor. (Column 12, lines 66-67 thru column 13, line 1 Note that the present invention may be applied to either a system constituted by a plurality of devices or an apparatus consisting of a single device.)

With regard to claim 17, Akiyama teaches a method comprising generating bitmap data at a first control unit, connecting the first control unit with a second control unit which controls

a printing engine which controls a printing operation, and driving the first and second control units with a single processor. (Figure 1 shows connection of first and second control units driven by a single processor, in addition, Column 1, lines 14-22, An image forming apparatus, which is constituted by a video controller for converting code data described in a printer command system such as a page description language into pixel data, and a printer engine for forming an image on the basis of the pixel data supplied from the video controller and transferring and fixing the formed image on, e.g., a recording paper sheet, is known. A video interface connecting the video controller and the printer engine will be described below.)

With regard to claim 18, Akiyama teaches a method comprising: generating print data at a computer and transmitting the print data to the first control unit, the bitmap data being generated in accordance with the transmitted print data. (Column 5, lines 35-50, A CPU 16 receives coded image information (code data) from an external apparatus 27 such as a host computer via an external interface 17 upon execution of a control program stored in a ROM 19. The received code data is input to an image processing unit 20. The image processing unit 20 stores the input code data in a RAM 21, and interprets the code data. The external apparatus 27 such as a host computer can perform various kinds of setting operations for the controller unit 26 via the external interface 17. A RAM 18 is used as registers, and the like. A ROM 22 stores font data corresponding to the values of code data. Font data corresponding to code data are read out from the ROM 22 to convert all received code data into video data consisting of dots, and the converted data are stored in a frame memory 23).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 4, 8, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Akiyama (U.S. Patent No. 5,872,635)** in view of **Kim (U.S. Patent No. 6,433,811)**

With regard to claim 4, Akiyama teaches an image forming apparatus wherein the engine control unit is an application specific integrated circuit (ASIC). . (Column 12, lines 66-67 thru column 13, line 1, Note that the present invention may be applied to either a system constituted by a plurality of devices or an apparatus consisting of a single device.)
Akiyama does not teach the engine control unit comprises a memory to store state information about the engine mechanism.

Kim teaches an engine control unit that comprises a memory to store state information about the engine mechanism. (Column 5, lines 1-6, An engine controller 206 exchanges various commands with the printer engine CPU 202, transmits address information and transmits bit-map data that are image-processed and stored in the memory 204 to the printer engine CPU 202, and controls the entire operational states, operation start time and power supplying state of the printer engine 203.)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to include a memory unit on the engine control unit.

The suggestion/motivation for doing so would have been to increase efficiency and effectiveness of the engine control unit.

Therefore, it would have been obvious to combine Kim with Akiyama to obtain the invention as specified in claim 4.

With regard to claim 8, Akiyama teaches an image forming apparatus wherein the engine control unit is an application specific integrated circuit (ASIC). (Column 12, lines 66-67 thru column 13, line 1, Note that the present invention may be applied to either a system constituted by a plurality of devices or an apparatus consisting of a single device.)

Akiyama does not teach the engine control unit comprises a memory to store state information about the engine mechanism.

Kim teaches an engine control unit that comprises a memory to store state information about the engine mechanism. (Column 5, lines 1-6, An engine controller 206 exchanges various commands with the printer engine CPU 202, transmits address information and transmits bit-map data that are image-processed and stored in the memory 204 to the printer engine CPU 202, and controls the entire operational states, operation start time and power supplying state of the printer engine 203.)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to include a memory unit on the engine control unit.

The suggestion/motivation for doing so would have been to increase efficiency and effectiveness of the engine control unit.

Therefore, it would have been obvious to combine Kim with Akiyama to obtain the invention as specified in claim 8.

With regard to claim 13, Akiyama teaches an image forming apparatus that includes a controller to control the engine to perform the printing operation. (Figure 2B shows an engine control unit that controls engine mechanism)

Akiyama does not teach the engine control unit comprises a memory to store state information about the engine mechanism.

Kim teaches an engine control unit that comprises a memory to store state information about the engine mechanism. (Column 5, lines 1-6, An engine controller 206 exchanges various commands with the printer engine CPU 202, transmits address information and transmits bit-map data that are image-processed and stored in the memory 204 to the printer engine CPU 202, and controls the entire operational states, operation start time and power supplying state of the printer engine 203.)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to include a memory unit on the engine control unit.

The suggestion/motivation for doing so would have been to increase efficiency and effectiveness of the engine control unit.

Therefore, it would have been obvious to combine Kim with Akiyama to obtain the invention as specified in claim 13.

6. **Claim 15, 19, and 20** rejected under 35 USC 103(a) as being unpatentable over **Akiyama (U.S. Patent No. 5,872,635)** in view of **Lee (U.S. Patent No. 5,737,602).**

With regard to claim 15, Akiyama teaches an image forming apparatus comprising a bi-directional data bus and a control bus. (Figure 1 shows Video I/F, a bi-directional bus, in addition, Figure 2B shows each signal of the bi-directional bus, and Figure 3 lists each signal)

Akiyama does not specifically teach a horizontal synchronization (HSYNC) signal, a page synchronization signal request signal and a page synchronization (PSYNC) signal.

Lee teaches a control bus to input and output a horizontal synchronization (HSYNC) signal, a page synchronization signal request signal and a page synchronization (PSYNC) signal. (Figure 3 shows HSYNC, PSYNC, and PSYNCRQ)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to control the engine unit and control unit with the HSYNC, PSYNC, and PSYNCRQ signals.

The suggestion/motivation for doing so would have been to simplify the control of the image-forming device because Lee teaches practical implementation for the method and apparatus of Akiyama. Any difference would be an engineering design choice.

Therefore, it would have been obvious to combine Lee with Akiyama to obtain the invention as specified in claim 15.

With regard to claim 19, Akiyama teaches a method related to generating print data. (Explained in claim 18 rejection above)

Akiyama does not specifically teach a method further comprising: sending notification to the second control unit when the generating the bitmap data is complete; driving the printing engine in response to the sending of the notification; generating a horizontal sync (HSYNC)

signal at the printing engine in response to the driving of the printing engine; and transmitting the HSYNC signal from the second control unit to the first control unit.

Lee teaches sending notification to the second control unit when the generating the bitmap data is complete; driving the printing engine in response to the sending of the notification; generating a horizontal sync (HSYNC) signal at the printing engine in response to the driving of the printing engine; and transmitting the HSYNC signal from the second control unit to the first control unit. (Column 3, lines 41-60 First, when engine unit 200 is prepared to operate, engine controller 220 outputs a ready signal RDY to inform controller 120 of this condition. After the ready signal RDY is provided to controller 120, controller 120 provides a print command signal PRINT to engine controller 220. In response to the print command signal PRINT, engine controller 220 drives a motor (not shown), picks up the paper, moves the paper to a position where printing can occur, and provides a page synchronous request signal PSYNCRQ to controller 120. After the page synchronous request signal PSYNCRQ is provided to controller 120, controller 120 outputs a page synchronous signal PSYNC to engine controller 220. At this time, controller 120 transmits line data having the bit map data format corresponding to one scan line to engine controller 220 in synchronism with a horizontal synchronous signal HSYNC which is periodically generated by engine controller 220. Then, after receiving the line data, engine controller 220 enables printing of the data on paper.)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to include the process of controlling the engine control unit and control unit from the Lee reference in the method related to generating print data taught by Akiyama, because Lee teaches practical implementation for the method and apparatus of Akiyama.

The suggestion/motivation for doing so would have been an engineering design choice.

Therefore, it would have been obvious to combine Lee with Akiyama to obtain the invention as specified in claim 19.

With regard to claim 20, Akiyama teaches a method related to generating print data. (Explained in claim 18 and 19 rejections above)

Akiyama does not specifically teach determining that an RPM of a motor of the printing engine has reached a predetermined value; transmitting a page sync (PSYNC) request signal from the first control unit to the second control unit in response to the transmitting of the HSYNC signal and the determining of the RPM; feeding a paper for printing when the second control unit receives the PSYNC request signal; and transmitting a PSYNC signal from the second control unit to the first control unit when a sensor of the printing engine senses the fed paper. (Column 1, lines 26-29 the speed of a driving motor in an engine unit remains constant and a period of the horizontal synchronous signal HSYNC for receiving the data of the one scan line is also constant and Column 3, lines 41-60 First, when engine unit 200 is prepared to operate, engine controller 220 outputs a ready signal RDY to inform controller 120 of this condition. After the ready signal RDY is provided to controller 120, controller 120 provides a print command signal PRINT to engine controller 220. In response to the print command signal PRINT, engine controller 220 drives a motor (not shown), picks up the paper, moves the paper to a position where printing can occur, and provides a page synchronous request signal PSYNCRQ to controller 120. After the page synchronous request signal PSYNCRQ is provided to controller 120, controller 120 outputs a page synchronous signal PSYNC to engine controller 220. At this time, controller 120 transmits line data having the bit map data format corresponding to one scan

line to engine controller 220 in synchronism with a horizontal synchronous signal HSYNC which is periodically generated by engine controller 220. Then, after receiving the line data, engine controller 220 enables printing of the data on paper.)

At the time when the invention was made, it would have been obvious to one of ordinary skill in the art to include the process of controlling the engine control unit and control unit from the Lee reference in the method related to generating print data taught by Akiyama, because Lee teaches practical implementation for the method and apparatus of Akiyama.

The suggestion/motivation for doing so would have been an engineering design choice.

Therefore, it would have been obvious to combine Lee with Akiyama to obtain the invention as specified in claim 20.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence E. Wills whose telephone number is 571-270-3145. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on 571-272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEW
October 11, 2007

AUNG S. MOE
SUPERVISORY PATENT EXAMINER
10/15/07